

8-5-02

PTO/55716 (10-01)

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Approved for use through 10/31/2002. OMB 0651-0032
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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. ET 955215354 US

PTO
60/400792
08/02/02

INVENTOR(S)					
Given Name (first and middle (if any))		Family Name or Surname		Residence (City and either State or Foreign Country)	
TAVIS DION		SCHRIEFER		CARROLLTON, TX	
<input type="checkbox"/> Additional inventors are being named on the _____ separately numbered sheets attached hereto					
TITLE OF THE INVENTION (500 characters max)					
ELECTRICAL OR OPTICAL CONNECTOR ADAPTER WITH ROTATIONAL MECHANISMS					
Direct all correspondence to: CORRESPONDENCE ADDRESS					
<input checked="" type="checkbox"/> Customer Number		<input type="text"/>		<input type="checkbox"/> Firm or Individual Name	
OR		Type Customer Number here		Place Customer Number Bar Code 32197	
PATENT TRADEMARK OFFICE					
Address		Address			
City		State		ZIP	
Country		Telephone		Fax	
ENCLOSED APPLICATION PARTS (check all that apply)					
<input checked="" type="checkbox"/> Specification Number of Pages		<input type="text" value="5"/>		<input type="checkbox"/> CD(s), Number	
<input checked="" type="checkbox"/> Drawing(s) Number of Sheets		<input type="text" value="4"/>		<input type="checkbox"/> Other (specify)	
<input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76					
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT					
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.		<input type="text"/>		FILING FEE AMOUNT (\$)	
<input checked="" type="checkbox"/> A check or money order is enclosed to cover the filing fees		<input type="text"/>		<input type="text" value="\$80.00"/>	
<input type="checkbox"/> The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number:		<input type="text"/>			
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.		<input type="text"/>			
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government					
<input checked="" type="checkbox"/> No.					
<input type="checkbox"/> Yes, the name of the U.S. Government agency and the Government contract number are: _____					

Respectfully submitted,

T. D. Schriever

Date **2 AUG 2002**

SIGNATURE

REGISTRATION NO.

TYPED or PRINTED NAME **TAVIS D. SCHRIEFER**

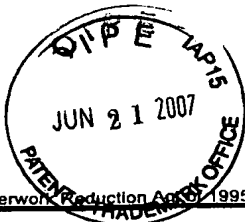
(if appropriate)

TELEPHONE **972-395-9600**

Docket Number:

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C. 20231.



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FEE TRANSMITTAL for FY 2002

Patent fees are subject to annual revision.

Complete if Known

Application Number	
Filing Date	2 AUG 2002
First Named Inventor	TAVIS D. SCHRIEFER
Examiner Name	
Group Art Unit	
Attorney Docket No.	

TOTAL AMOUNT OF PAYMENT (\$ 80.00

METHOD OF PAYMENT

1. ☐ The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:

Deposit Account Number

Deposit Account Name

☐ Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17

☐ Applicant claims small entity status. See 37 CFR 1.27

2. ☒ Payment Enclosed:

☒ Check ☐ Credit card ☐ Money Order ☐ Other

FEE CALCULATION (continued)

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for <i>ex parte</i> reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension for reply within second month	
117	920	217	460	Extension for reply within third month	
118	1,440	218	720	Extension for reply within fourth month	
128	1,960	228	980	Extension for reply within fifth month	
119	320	219	160	Notice of Appeal	
120	320	220	160	Filing a brief in support of an appeal	
121	280	221	140	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,280	241	640	Petition to revive - unintentional	
142	1,280	242	640	Utility issue fee (or reissue)	
143	460	243	230	Design issue fee	
144	620	244	310	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Processing fee under 37 CFR 1.17(q)	
126	180	126	180	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	740	246	370	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	740	249	370	For each additional invention to be examined (37 CFR § 1.129(b))	
179	740	279	370	Request for Continued Examination (RCE)	
169	900	169	900	Request for expedited examination of a design application	
Other fee (specify) _____					
*Reduced by Basic Filing Fee Paid					
SUBTOTAL (3)					(\$)

FEE CALCULATION

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
101	740	201	370	Utility filing fee	
106	330	206	165	Design filing fee	
107	510	207	255	Plant filing fee	
108	740	208	370	Reissue filing fee	
114	160	214	80	Provisional filing fee	80
SUBTOTAL (1)					(\$ 80.00

2. EXTRA CLAIM FEES

Total Claims -20** = X =

Independent Claims -3** = X =

Multiple Dependent

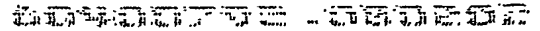
Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
103	18	203	9	Claims in excess of 20	
102	84	202	42	Independent claims in excess of 3	
104	280	204	140	Multiple dependent claim, if not paid	
109	84	209	42	** Reissue independent claims over original patent	
110	18	210	9	** Reissue claims in excess of 20 and over original patent	
SUBTOTAL (2)					(\$)

**or number previously paid, if greater; For Reissues, see above

SUBMITTED BY		Complete (if applicable)	
Name (Print/Type)	TAVIS D. SCHRIEFER	Registration No (Attorney/Agent)	Telephone 972-395-9600
Signature		Date	8 AUG 2002

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Electrical or Optical Connector Adapter with Rotational Mechanisms

a device in both planes for limiting the degree of rotation of the rotational mechanisms in each plane;

methods for providing positional stability of both rotating mechanisms.

a first rotational mechanism in the form of a hinge;

a second rotational mechanism in the form of two mating planar surfaces;

first and second rotational mechanisms will have rotational capabilities along with positional stability resistance characteristics such that the torque required to initiate rotation of the joint is greater than the torsional forces created by the weight and orientation of any attached cables or devices in a static situation. These characteristics could be achieved with indexing surface features along with mating radial serrations providing an indexing function, inherent surface friction between mating parts or tension produced by springs or levers.

3. Alternate embodiments of rotational mechanisms:

where one of the two rotational mechanisms are manufactured in fixed orientations in order to provide solutions to specific problems of interfacing certain host devices with certain peripheral devices;

where rotational control in all planes is achieved by use of a ball and socket joint;

where rotational control in all planes is achieved by use of a goose-neck or flexible jointed pipe.

4. Electrical or optical connectors in claim 1 of a variety of types:

male or female forms;

USB, High Speed USB (2.0), FireWire (IEEE 1394 and i.LINK), Video Monitor, RS232, fiber optic or similar specifications that are typically used to define the physical, electrical and /or optical communications characteristics between host and peripheral devices.

5 A housing of the connectors in claim 1 produced from vinyl, rubber, plastic, polypropylene or other materials suitable for an electrical or optical connector housing.

6. A flexible cable, suitable for conducting electrical or optical signals, located within the housing defined in claim 5, such that the flexible cable allows rotation to occur in two planes of the rotational mechanisms as defined in claims 2 and 3, while maintaining electrical or optical connectivity between the first and second connector.

7. An embodiment of the adjustable connector that has two or more secondary connectors, so to act as a hub for multiple peripheral devices, all communicating electrically or optically with the host device.

DESCRIPTION

A variety of computer peripheral devices are designed to be directly interfaced to host devices, such as computers. Many times this results in an awkward, insecure, or precarious orientation of the peripheral device in relation to the host device. In some cases the peripheral device cannot be successfully interfaced to the host device due to the physical conflicts between the housing of the host device and the peripheral device. In other cases the physical characteristics of the peripheral device when interfaced with the host device, prevents the interface of other peripheral devices to the host device. The adjustable connector overcomes these conflicts by allowing rotation in two planes.

Peripheral devices that will benefit from the adjustable connector include, but are not limited to: data storage devices, BlueTooth or other communication devices, security devices, lights, fans, cables, and antennas.

OPERATION

FIG 1 depicts the side view of the preferred embodiment that complies with USB and USB 2.0 standards. Connector 10, USB type-A, interfaces with a host device. Rotational mechanism 12 has a $\pm 90^\circ$ range of motion in a vertical manner in relation to connector 10.

Second rotational mechanism 14 allows rotation of the second connector 16 in either direction on one plane up to 120°.

FIG 2 depicts the top view of the preferred embodiment that complies with USB and USB 2.0 standards. Connector 10, USB type-A, interfaces with a host device. Rotational mechanism 14 has a +/-120° range of motion in a horizontal manner in relation to connector 10.

FIG3 depicts a peripheral device interfaced to a host computer without the use of the adjustable connector.

FIG 4 depicts a peripheral device interfaced to a host computer with the aid of the adjustable connector. In this case, mechanism 12 (hidden) is rotated 90° and mechanism 14 is rotated 90°. This illustrates the benefit of preventing the peripheral device from protruding significantly away from the host computer, placing the peripheral device in an awkward and precarious position where it could be easily damaged.

FIG 5 depicts the side view of an additional embodiment of the adjustable connector that has two secondary connectors 16 & 20 acting as a hub for two peripheral devices. This embodiment contains all the same features as the adjustable connector in FIG 1, with the added functionality of an additional rotational mechanism 18 and the associated secondary connector 20.

FIG 6 depicts the top view of the additional embodiment of the adjustable connector that has two secondary connectors 16 & 20 acting as a hub for two peripheral devices. This embodiment contains all the same features as the adjustable connector in FIG 2, with the additional rotational mechanism 18 able to operate independently from rotational mechanism 16. This allows for the peripheral devices to interface into input connectors 16 & 20 and be positioned in different and independent fashions.

FIG 7 illustrates the additional embodiment of the adjustable connector with two peripheral USB cables interfacing into input connectors 16 & 20. In this case, mechanism 12 (hidden) is rotated 90° in a vertical manner in relation to connector 10, mechanism 14 is rotated 90° in a horizontal

manner in relation to connector 10 and mechanism 18 is rotated 90° in the opposite direction of mechanism 14.

FIG 8 illustrates an alternate embodiment of the rotational mechanism where one of the two rotational mechanisms are manufactured in fixed.

FIG 9 illustrates an alternate embodiment of the rotational mechanism where rotational control in all planes is achieved by use of a goose-neck or flexible jointed pipe.

FIG 10 illustrates an alternate embodiment of the rotational mechanism where rotational control in all planes is achieved by use of a ball and socket joint;

REFERENCED NUMERALS IN DRAWINGS

- 10 host device connector
- 12 vertical rotational mechanism
- 14 horizontal rotational mechanism
- 16 peripheral device connector
- 18 additional horizontal rotational mechanism
- 20 additional peripheral device connector

1/4

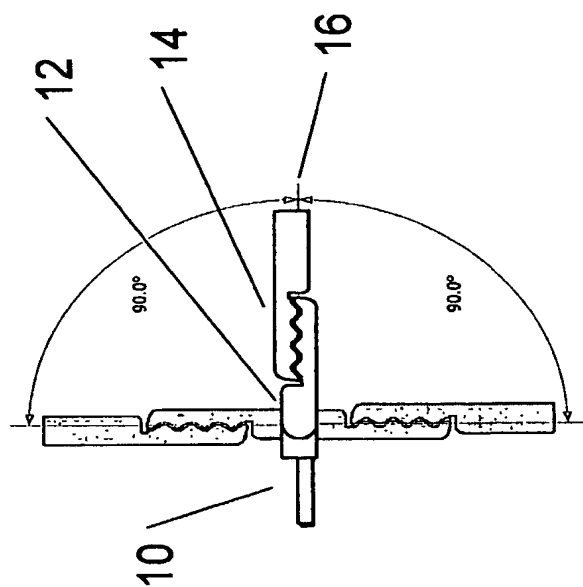


FIGURE 1

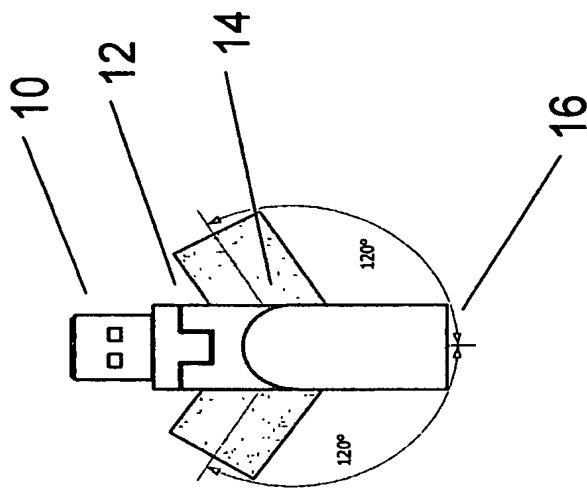


FIGURE 2

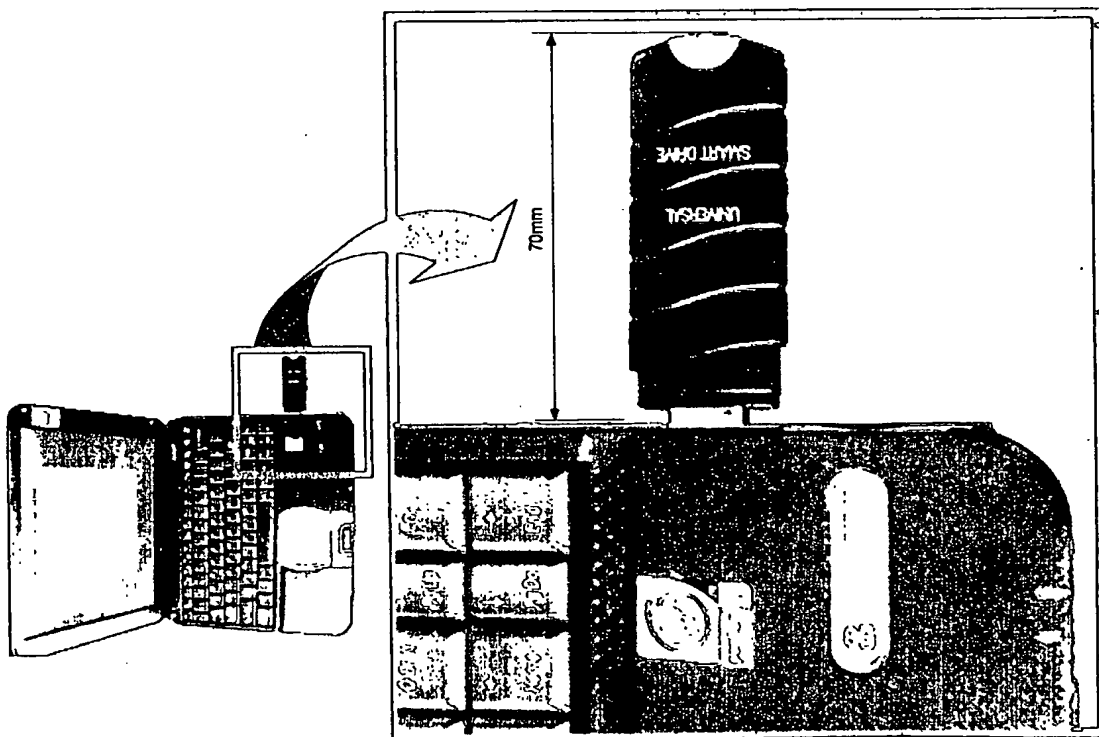


FIGURE 3

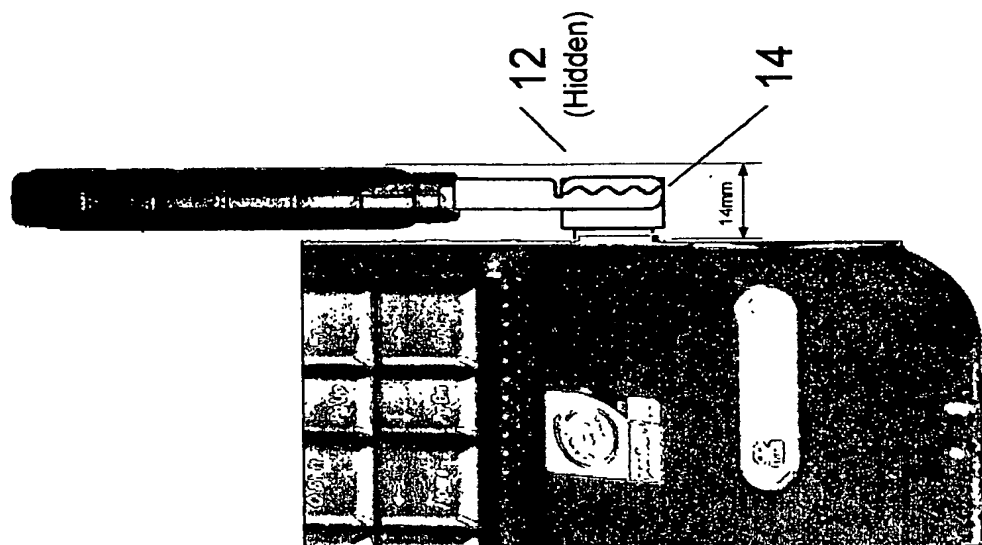


FIGURE 4

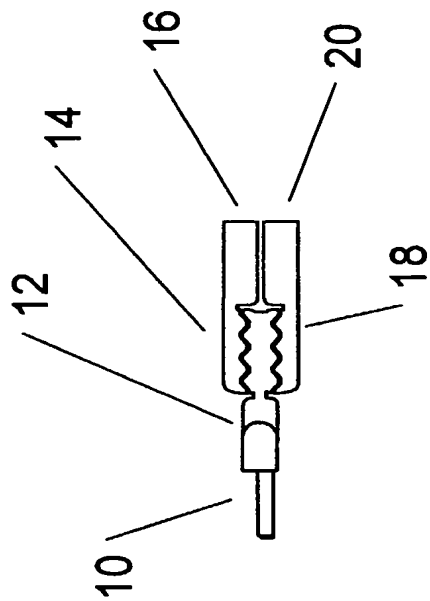


FIGURE 5

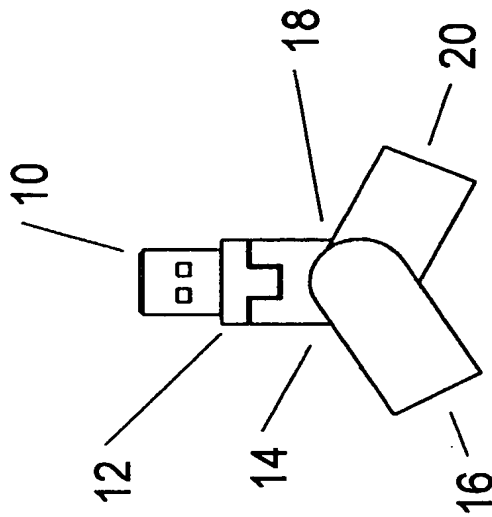


FIGURE 6

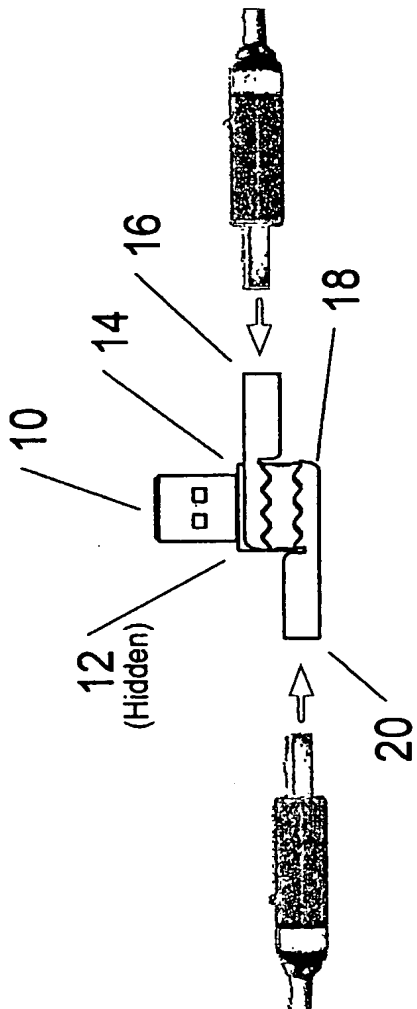


FIGURE 7

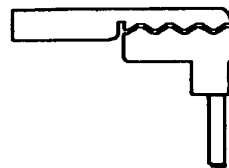


FIGURE 8

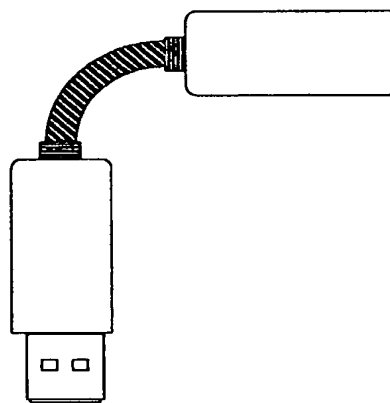


FIGURE 9

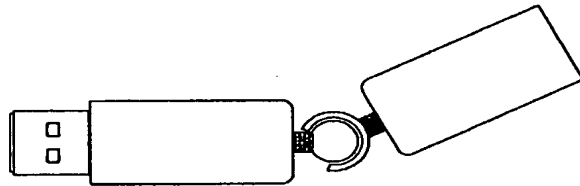


FIGURE 10